

HexapodPI Tango Cpp Class

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HexapodPI Class Identification :

Contact : at synchrotron-soleil.fr - jean.coquet
Class Family : Motion
Platform : All Platforms
Bus : Ethernet
Manufacturer : PI (Physik Instrument)
Manufacturer ref. : PI M810

HexapodPI Class Inheritance :

- [Tango::DeviceImpl](#)
 - HexapodPI

HexapodPI Class Description :

controls hexapods from PI

HexapodPI Properties :

There is no class properties

Device Properties			
Name	Description	Type	Default Value
Url	IP Address of the HXP Controller	String	none
Port	port to connect to HXP	int	none
Period	polling period	short	none

HexapodPI Class Commands				
Name	Input type	Output type	Level	Description
State	DEV_VOID	DEV_STATE	OPERATOR	This command gets the device state (stored in its <i>device_state</i> data member) and returns it to the caller.
Status	DEV_VOID	CONST_DEV_STRING	OPERATOR	This command gets the device status (stored in its <i>device_status</i> data member) and returns it to the caller.
InitializeReferencePosition	DEV_VOID	DEV_VOID	EXPERT	starts the homing process
GoToPosition	DEVVAR_DOUBLEARRAY	DEV_VOID	EXPERT	sends the hexapod to the 6 given positions values X Y Z U V W
				sets the

SetSystemCoordinates	DEVVAR_DOUBLEARRAY	DEV_VOID	EXPERT	system coordinates (Pivot Point) to the 3 XYZ coordinates must be at home point (0,0,0,0,0,0) to accept the change of Pivot point
GetSystemCoordinates	DEV_VOID	DEVVAR_DOUBLEARRAY	EXPERT	gets Pivot Point coordinates
Stop	DEV_VOID	DEV_VOID	OPERATOR	Stops all movements
Off	DEV_VOID	DEV_VOID	EXPERT	disble servos
On	DEV_VOID	DEV_VOID	EXPERT	enable servos

Command State :

This command gets the device state (stored in its *device_state* data member) and returns it to the caller.

State Definition		
Input Argument	Tango::DEV_VOID	none.
Output Argument	Tango::DEV_STATE	State Code
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Status :

This command gets the device status (stored in its *device_status* data member) and returns it to the caller.

Status Definition		
Input Argument	Tango::DEV_VOID	none.
Output Argument	Tango::CONST_DEV_STRING	Status description
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command InitializeReferencePosition :

starts the homing process

InitializeReferencePosition Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command GoToPosition :

sends the hexapod to the 6 given positions values X Y Z U V W

GoToPosition Definition		
Input Argument	Tango::DEVVAR_DOUBLEARRAY	the 6 positions X Y Z U V W
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..

Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command SetSystemCoordinates :

sets the system coordinates (Pivot Point) to the 3 XYZ coordinates
must be at home point (0,0,0,0,0,0) to accept the change of Pivot point

SetSystemCoordinates Definition		
Input Argument	Tango::DEVVAR_DOUBLEARRAY	the XYZ coordinates
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command GetSystemCoordinates :

gets Pivot Point coordinates

GetSystemCoordinates Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEVVAR_DOUBLEARRAY	the 3 X Y Z values
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Stop :

Stops all movements

Stop Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Off :

disble servos

Off Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command On :

enable servos

On Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	EXPERT	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

HexapodPI Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
x	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	translation suivant X dans le repere en cours???
y	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	translation suivant Y dans le repere en cours???
z	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	translation suivant Z dans le repere en cours???
u	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	rotation suivant X
v	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	rotation suivant Y
w	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	rotation suivant Z
freeze	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	freezes the hexapod when true: \nyou can write attributes x,y,z,u,v,w without a real move.\nwhen written to false sends the command with the values written to the HXP
velocity	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	EXPERT	

There is no dynamic attribute defined.

Attribute x :

translation suivant X dans le repere en cours???

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	X
unit	mm
standard unit	mm
display unit	mm
format	%.3f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute y :

translation suivant Y dans le repere en cours???

Attribute Definition	

Attribute Properties	

Attribute Event Criteria	

Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

label	Y
unit	mm
standard unit	mm
display unit	mm
format	%.6.3f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute z :

translation suivant Z dans le repere en cours???

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

Attribute Properties	
label	Z
unit	mm
standard unit	mm
display unit	mm
format	%.6.3f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user	

Write allowed for	All states
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delta_val	
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code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute u :

rotation suivant X

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	U
unit	1/2
standard unit	1/2
display unit	1/2
format	%6.3f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute v :

rotation suivant Y

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	V
unit	$\ddot{\text{I}}_{\text{c}} \frac{1}{2}$
standard unit	$\ddot{\text{I}}_{\text{c}} \frac{1}{2}$
display unit	$\ddot{\text{I}}_{\text{c}} \frac{1}{2}$
format	%6.3f
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute w :

rotation suivant Z

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling	

Attribute Properties	
label	W
unit	$\ddot{\text{I}}_{\text{c}} \frac{1}{2}$
standard unit	$\ddot{\text{I}}_{\text{c}} \frac{1}{2}$
display unit	$\ddot{\text{I}}_{\text{c}} \frac{1}{2}$
format	%6.3f
max_value	
min_value	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set

Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute freeze :

freezes the hexapod when true: \nyou can write attributes x,y,z,u,v,w without a real move.\nwhen written to false sends the command with the values written to the HXP

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_BOOLEAN
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	freeze
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute velocity :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	velocity
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

There is no state defined